



Value-Added and Other Methods for Measuring School Performance: An Analysis of Performance Measurement Strategies in Teacher Incentive Fund Proposals

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In “Value-Added and Other Methods for Measuring School Performance: An Analysis of Performance Measurement Strategies in Teacher Incentive Fund Proposals”—a paper presented at the February 2008 National Center on Performance Incentives research to policy conference—Robert Meyer and Michael Christian examine select performance-pay plans used by recipients of the federally funded Teacher Incentive Fund (TIF). The TIF program, funded by the U.S. Department of Education, provides competitive grants to local education agencies, charter schools, or state educational agencies for the development of performance-pay plans. TIF guidelines require that funds be used to (1) distribute bonus awards to educators based on student achievement results, (2) observe and evaluate teachers in the classroom, and (3) encourage teachers to assume additional responsibilities within their schools. Research literature often cites the challenges of designing performance pay programs, specifically, determining how to measure school, teacher, and student performance, and how to most fairly distribute bonus awards. This paper focuses specifically on the nature of value-added models used by TIF grantees to evaluate educator performance.

Performance Measure Strategies in TIF Plans

Guidelines for the use of TIF funds provide substantial freedom for recipients to create performance-pay plans that best suit their specific needs. TIF grantees use a variety of approaches for determining the distribution of bonus awards to educators. Meyer and Christian focus on the performance measurement strategies used by 34 district recipients, which embody the following six strategies for measuring educators’ impact on student achievement.

- Value-added models — used by 17 districts
- Student gain models — used 2 districts
- Students’ movement across academic proficiency levels — used by 3 districts
- Students’ rates of proficiency or attainment — used by 5 districts
- A combination of student gains, movement across proficiency levels, or proficiency/attainment rates — used by 6 districts
- Students’ individual learning plans — used by 1 district

Value-Added Models

In value-added models, a school's contribution to growth in student achievement is estimated. Other contributors to students' academic growth (e.g., family and student characteristics, prior achievement) are controlled for in order to isolate the school's effect. The assumption is that fair comparisons of student outcomes can then be made across multiple schools. Half the districts examined by Meyer and Christian use value-added models.

Student Gain Models

The use of student gain models is similar to value-added, but is less complex, as it does not use statistical evidence to control for previous student achievement. In this model, gain is calculated as the difference between average student performance in one year and average student performance of the same students in a previous year. Its emphasis is on achievement from one year to the next. The gain model was used in only a few districts.

Movement Across Academic Proficiency Levels

Three of the TIF districts base their bonus awards on changes in the proficiency levels of students from year to year. These proficiency levels might be defined as simply as "below proficient," "proficient," and "advanced," or as complex as a district deems necessary. Within this model, some districts use a point system to further differentiate degrees of performance. More points might be awarded for students who move through more levels or for students who have a greater need to advance in proficiency levels.

Rates of Academic Proficiency or Attainment

Proficiency rates evaluate the percentage of students scoring above a minimum proficiency threshold. Attainment simply looks at the average scores of students either in a school or in the classroom. This model, used by five TIF districts, does not consider

past performance in evaluating students' current performance.

Other Models for Measuring Student Performance

Some districts use several approaches to determine educators' contribution to student achievement. These hybrid models use some combination of gain models, movement across proficiency levels, and proficiency or attainment rates. One district uses individual achievement plans for students, resulting in bonus awards for teachers whose students meet the goals outlined in their plans.

Conclusions

Though many of the TIF grantees use some form of a value-added model, smaller school districts are more likely to use less sophisticated approaches in their proposed performance pay plans. Some performance measurement strategies, such as the use of proficiency or attainment rates, noticeably deviate from the value-added model. Meyer and Christian argue that any approach that considers past student achievement in its analysis of current achievement is preferable over an attainment model. They also point out a weakness that can easily arise when using movement across proficiency levels: If students do not cross a proficiency threshold, their gains may not be counted, even if they have made improvements.

The authors discuss several benefits to using a value-added model. Primarily, it can be designed and customized to meet the needs of a district and can minimize, if not remove, many of the problems or biases that arise with use of other performance measurement strategies. Smaller districts often do not have the technical capacity to build and administer a value-added model, which likely explains their propensity to use less sophisticated strategies when measuring student performance. Meyer and Christian suggest that the use of more advanced strategies might be feasible for small districts if they work in concert with other districts to create a value-added system that serves multiple districts.



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